

SETTING PILES IN ROCK

Effective: November 14, 1996

Revised: April 19, 2012

This work shall consist of making shaft excavations through soil and rock, setting piles in rock and backfilling the shaft excavation.

The excavations for each pile shall be made by drilling through the overburden soils and into rock to satisfy the diameter and embedment depth in rock as indicated on the plans. All excavated material shall be disposed of by the Contractor.

The actual top of rock will be considered as the point where rock, defined as bedded deposits and conglomerate deposits exhibiting the physical characteristics and difficulty of rock removal as determined by the Engineer, is encountered which cannot be drilled with earth augers and/or underreaming tools configured to be effective in the soils indicated in the contract documents, and requires the use of special rock augers, core barrels, air tools, blasting, or other methods of hand excavation. When the top of rock encountered is above or below the estimated elevation indicated on the plans, the piles shall be cut or spliced per Article 512.05(a) to satisfy the required embedment in rock.

The Contractor shall be responsible for hole stability by using accepted drilling methods and temporary casing where site conditions warrant, no permanent casings or side forms will be allowed. All loose rock, earth, debris and water shall be removed from the hole prior to placing concrete. If the flow of water into the hole is excessive or if pumping operations are likely to cause hole instability, the level of water in the hole shall be allowed to stabilize and the concrete placed by tremie methods according to Article 503.08 of the Standard Specifications.

The bottom of each hole shall be filled with Class SI Concrete to a depth of at least 6 inches (150 mm) and then the piles shall be placed in the hole and properly located. The piles shall be securely braced and held in position prior to and during the placing and curing of the remainder of the Class SI Concrete until test specimens show that a modulus of rupture of 650 psi (4.5 MPa) has been attained. Any operations that might damage the concrete around the piles shall be deferred until the concrete attains the required strength. The hole shall be filled with Class SI Concrete up to at least 6 inches (150 mm) above the top of rock. The remainder of the hole, to the bottom of encasement, footing or abutment, shall be filled with Class SI Concrete or porous granular embankment at the option of the Contractor unless otherwise detailed in the plans.

Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations, etc.) that cannot be removed with normal earth drilling procedures, but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation, as a result of the Contractor's operation, shall not be defined as obstructions and shall be removed at the Contractor's expense.

This work will be paid for at the contract unit price each for SETTING PILES IN ROCK. The Class SI Concrete and any porous granular embankment backfilled around each pile shall not be paid for separately but shall be included in this item. The furnishing of piles is not included in this item but will be paid for elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04.